REMARKS

The reference to related application was added to recite the patent application. The specification and claims were amended in sections so as to exactly reflect the prosecution history during the parent case. Claim 8 therefore stands allowed. Claims 5-7 are subject to prosecution during the pendency of this divisional application. Claims 5-7 were rejected as been obvious in view of Phillips, USSR, Hosman or Blass in further view of Hettlage. Applicant requests reconsideration. Applicant requests that the examination particularly note that invention is determined by a consideration of both the problem solved and the solution thereto. Claims 5-7 contain square and circular cross-sectioned and straight and bent shaped sections in a selectable waveguide, as a new combination as determined during the prior prosecution. The problem solved is not discussed at all the cited references. As such, the new combination cannot be considered as obvious, as the new combination is not suggested for solving the problem solved of being able to selectably isolate orthogonally polarized signals.

"The conventional waveguide switch has two selectable position settings for aligning two curved waveguide section bends symmetrical about a rotating axis. The curved selectable waveguide section does not use reflecting surfaces, but rather circular or rectangular cross section waveguide sections."; "The bent waveguide section 20 and the straight waveguide section 14 can have either a square or circular cross section and sized for the frequencies of interest; and "The waveguide cross sections 14 and 20 remains

unaltered from the antenna feed port 10 to either of the linear port 22 and the circular port 16. The cross section areas of the waveguide sections 14 and 20 remain fixed within the selectable waveguide. Because the waveguide cross section remains unchanged, no mechanism exists for polarization modifications from antenna feed port 10 through the waveguide sections 14 and 20 to the ports 22 and 16. Consequently, the waveguide does not degrade polarization isolation. The waveguide cross sections 14 and 20 may be square and in this case the signals are propagated on TE01 and TE10 waveguide modes. The waveguide cross section can also be circular and the signals 18 and 24 are propagated on orthogonal TE11 waveguide modes. Hence, the waveguide cross section of the sections 14 and 20 is preferably preserved throughout the rotating member 30."

The present inventions have two significant defining characteristics to solve a particular problem. The first characteristic is that the two waveguide sections have a different shape respecting each other, that is, one section is straight and the other is bent at 45 degrees. The other characteristic is that the cross-sectional area of the waveguides must be such that there is no coupling between orthogonally polarized signals, that is, the cross-sections are either circular or square, so that orthogonal signals may simultaneously propagate through the waveguides without being distorted by each other and thereby remain isolated from each other, to thereby solve the undisclosed problem of concurrent communication of orthogonal signals through either one of the selectable waveguides. Claim 5 was amended to claim that the shapes

are either straight or bent at ninety degrees, and have cross sectional area that is either square or circular for enabling the concurrent communication of orthogonally polarized signals through the waveguides.

The cited references do not solve the problem of providing dual port routing of concurrently communicated orthogonally polarized signals. In particular, Hosman discloses a curved waveguide 19, Lanctot 117' discloses a rectangular waveguide shown clear in Figure 1, Hettlage discloses a curved waveguide 9, Phillips discloses curved waveguides 35, 30 and 32, Vogeley shows a disjointed waveguide 22 and 14 cause distortion of or coupling between orthogonally polarized signals. Blass discloses a rectangular cross section of waveguide 6. Tyrrell discloses curved waveguides 12 and 13. Lanctot 079' discloses rectangular waveguides 12 and 13. Miller discloses a rectangular waveguides Y, X1 and X2. USSR discloses only a single waveguide section. These waveguides are unsuitable for the solving the problem solved by the present inventions.

The cited references do not teach nor suggest a switch having straight and bent waveguides having square or circular cross sections for routing signals to a pair ports enabling concurrent communications of orthogonally polarized signals remaining isolated from each other during concurrent communication through either one of the waveguides. In this unique configuration, isolated orthogonally polarized signals can be concurrently communicated and routed to the selected port without distorting each other. Surely,

the cited references to not teach the problem solved by the present inventions.

The present office action concedes that the claimed invention is not anticipated by the prior art. The claimed invention relies upon the combination of straight and other ninety degree bent shapes, and square and circular cross sections so that orthogonal probes can be used to detect orthogonal signals that are not cross coupled during communication through the waveguide. The rejection of claim 5 claiming different shaped propagation waveguides, as obvious lacks comprehension of the purpose of the invention and the purpose of the explicitly claimed shaped conduits. The invention relies on the use of circular and square cross sections and the use of straight and ninety degree bent shapes that enables the propagation of orthogonally polarized signals without signal cross coupling, SO THAT, the use of orthogonal polarized sensitive probes can then be used to isolate the polarized signals of interest that are concurrently communicated through the waveguide. Such a problem, and of course, such a solution, is not addressed in the cited references, hence the arrangement in claim 5 can not possibly be deemed obvious in view of the cited references. The obviousness rejection based upon different shapes, admittedly not anticipated by the cited references, is a simplistic rejection based on mere identification of prior art elements, without understanding and analysis as to why the particularly claimed inventions are nonobvious. When the reasons for particularly claimed circular/square and straight/90° bent conduits are firstly understood as propagation conduits that do not cross-couple

orthogonally polarized signals, then solving a completely unknown problem, and hence completely unobvious, then the claimed combination could be understood as such, and allowance being imminently proper. The claims particularly claim that one waveguide shape is straight and the other is ninety degree bent for selective coupling, and that either one or both can have a circular or square cross-section for signal isolation without cross coupling. This arrangement and the isolation reason this combination is not taught in the prior art.

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The cited references do not teach nor suggest a switch having straight and 90° bent waveguides having square or circular cross sections for routing signals to a pair of ports enabling concurrent communications of orthogonally polarized signals remaining isolated from each other during concurrent communication through either one of the waveguides. In this unique configuration, isolated orthogonally polarized signals can be concurrently communicated and routed to the selected port without distorting each other. Surely, the cited references to not teach the problem solved by the present inventions, nor the solution thereto. Allowance of claims 5-7 is respectfully requested.

Respectfully Submitted

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